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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,311	09/24/2003	Eisaku Murakami	243116US3	4704
22850	7590	08/17/2005		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
			EXAMINER BEATTY, ROBERT B	
			ART UNIT 2852	PAPER NUMBER

DATE MAILED: 08/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/668,311

Applicant(s)

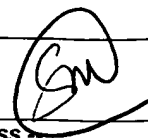
MURAKAMI ET AL.

Examiner

Robert Beatty

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) 50-54 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-14, 18, 20, 21, 23-32, 34, 36, 38-46, 48 and 49 is/are rejected.
- 7) ☒ Claim(s) 4, 15-17, 19, 22, 33, 35, 37 and 47 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
2. Claims 16,26-28 are objected to because of the following informalities:
in claim 16, "rich layer" is awkward.
in claims 26-28, the blades being in "counter form" and "trailing form" is awkward terminology. Appropriate correction is required.
3. Applicant's election with traverse of Invention I in the reply filed on 6/16/2005 is acknowledged. The traversal is on the ground(s) that there would be no serious burden. This is not found persuasive because the details of the toner would require a complete search in class 430.

The requirement is still deemed proper and is therefore made FINAL.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2,6,26-28,39-40 are rejected under 35 U.S.C. 102(b) as being anticipated by JP# 62-164376.

JP '376 teach an image forming apparatus comprising an image carrier 11, a charging unit 12, an exposing unit 13, a developing unit 14 and a transfer unit 15,16. See Fig.2. A cleaning device 18 comprises a first and second blade in contact with the image carrier rotating member to remove debris. The second blade, in a downstream direction of rotation of the image carrier, has an elastic member with abrasive particles dispersed therein in order to polish the image carrier. As seen in Figs 1-2, the blades have different configurations of counter-rotating and trailing forms. Each of the blades has a "cut" edge.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 21,23-25, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP# 62-164376.

JP '376 taught supra disclose most of what is claimed except the method of forming the blade by cutting, and the method of forming the toner. However, it is well known that the patentable features of an apparatus claim must be in the structure of the apparatus not the manner in which it is formed. See MPEP 2113.

6. Claims 3 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP# 62-164376 in view of Ziegelmuller et al.

JP '376 taught supra disclose most of what is claimed except the rotating member being cleaned is a paper carrier. Ziegelmuller et al. teach an image forming apparatus comprising a rotating image carrier 103, a transfer drum 141, and a paper conveyor 116 for carrying a paper to receive an image. A cleaning device 130 comprising a plurality of blade is disposed in contact with the paper carrier. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the cleaning device of JP '376 to clean a paper carrier because toner, dust and paper debris can be removed that accumulate over a number of image formations (col. 5, line 63 - col.6, line 6).

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP# 62-164376 in view of Sakai et al. (JP# 03-41455).

JP '376 taught supra disclose most of what is claimed except the contact width of the abrading blade is between 0.01 and 5 mm. Sakai et al. teach an image forming apparatus comprising a cleaning member 11,52 for abrading the image carrier's surface which have a contact width of below 3.6 mm. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a contact width within applicant's claimed range because adequate polishing can be accomplished as taught by Sakai et al.

8. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP# 62-164376 in view of Campbell et al.

JP '376 taught supra disclose most of what is claimed except the abrading blade having a base rubber layer not including the abrading particles. Campbell et al. teach an image forming apparatus comprising a rotating image carrier 3 having a cleaning device 19 and an abrading blade 5 downstream of the cleaning device. The cleaning blade comprises a rubber urethane layer with an abrasive layer (sand paper) adhered to the base layer (col.2, lines 32-35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the cleaning abrading blade of Campbell et al. as the abrading blade of JP '376 because an abrading operation can be accomplished without affecting other image forming operations.

9. Claims 11-12,14,18,29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP# 62-164376 in view of Yoshihara.

JP '376 taught supra disclose most of what is claimed except the abrading blade having a hardness between 65 - 100 degrees (specifically 85-100 degrees), the amount of abrasive material being between 0.5 - 50 % by weight, the abrasive material being ceric oxide, the contact angle being between 5 - 25 degrees, the pressure being between 10 - 80 gf/cm (specifically 10- 60 gf/cm) . Yoshihara teach an

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image forming apparatus comprising a rotating image carrier 1 and a cleaning blade 8 having abrasive particles for abrading the surface of the image carrier. The cleaning blade has a hardness between 60 and 80 degrees, uses ceric oxide for the abrasive particles in an amount between 0.05 - 2.0 %, contacts the image carrier at an angle of 20 - 30 degrees and has a pressure of 20 - 40 g/cm. See col.6, lines 1-44. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the cleaning blade of Yoshihara as the abrading blade because image fading due to debris build up on the image carrier can be avoided as taught in Yoshihara.

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP# 62-164376 in view of Campbell et al. as applied to claims 7-8 above and further in view of Yoshihara.

JP '376 and Campbell et al. taught supra disclose most of what is claimed except the cleaning abrading blade having a hardness between 65-85 degrees. Yoshihara teach an image forming apparatus comprising a rotating image carrier 1 and a cleaning blade 8 having abrasive particles for abrading the surface of the image carrier. The cleaning blade has a hardness between 60 and 80 degrees. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the cleaning blade of Yoshihara as the abrading blade because

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image fading due to debris build up on the image carrier can be avoided as taught in Yoshihara.

11. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP# 62-164376 in view of Goto (JP# 2002-341614).

JP '376 taught supra disclose most of what is claimed except rubber abrading blade having a dynamic friction not more than 1.8. Goto teach an image forming apparatus comprising a cleaning blade made of polyurethane having a dynamic friction of less than 0.9. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the dynamic friction of the blade less than 1.8 because too much wear of the image carrier can be prevented.

12. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP# 62-164376 in view of Negoro (JP# 59-200284).

JP '376 taught supra disclose most of what is claimed except the abrading particles having an average particle size between 0.05 - 100 μm . Negoro teach an image forming apparatus comprising a cleaning blade with abrading particles with an average particle size of less than 5 μm . It would have been obvious to one of ordinary skill in the art at the time the invention was made to use these size particles because adequate abrading of the image carrier can occur which prevents filming of the image carrier.

13. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP# 62-164376 in view of Kuwajima (JP# 03-152552).

JP '376 taught supra disclose most of what is claimed except the abrading blades penetration depth into the image carrier being 0.2 - 1.5 mm. Kuwajima teach a cleaning blade that has a penetration depth of 0.2 - 2.0 mm. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a penetration depth as disclosed in Kuwajima because adequate cleaning can be performed under a specified pressure.

14. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP# 62-164376 in view of Montfort (JP # 11-030938).

JP '376 taught supra disclose most of what is claimed except the abrading blade having a vibrator. Montfort teach a cleaning blade having a vibrator. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a vibrator with a cleaning blade in contact with the image carrier because an improved cleaning effect can be accomplished as taught in Montfort.

15. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP# 62-164376 in view of Shoji (JP# 05-027551).

JP '376 taught supra disclose most of what is claimed except the image forming apparatus including a process cartridge. Shoji teach an image forming apparatus having a process cartridge detachably attachable to the image forming apparatus wherein the process cartridge includes an image carrier, developing device, cleaning device, etc. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a process cartridge because refurbishment of the various parts of the process cartridge can be easily accomplished.

16. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP# 62-164376 in view of Shoji (JP# 05-027551) as applied to claim 36 above and further in view of Campbell et al.

JP# '376 and Shoji taught supra disclose most of what is claimed except the abrading blade having a base layer. Campbell et al. teach an image forming apparatus comprising a rotating image carrier 3 having a cleaning device 19 and an abrading blade 5 downstream of the cleaning device. The cleaning blade comprises a rubber urethane layer with an abrasive layer (sand paper) adhered to the base layer (col.2, lines 32-35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the cleaning abrading blade of Campbell et al. as the abrading blade of JP '376 because an abrading operation can be accomplished without affecting other image forming operations.

17. Claims 41, 43-44, 46, 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP# 62-164376 in view of Emoto et al.

JP '376 taught supra disclose most of what is claimed except the toner having a specific Dv/Dn ratio and being spherical and an intermediate transfer member being cleaned. Emoto teach the use of a toner which is spherical and has the claimed Dv/Dn ratio. See col.5, lines 53-63. As seen in Fig. 2, an intermediate transfer carrier 29 has a cleaning device 32 associated with it. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use this type of toner because good half-toner reproducibility can be ensured. Additionally, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the cleaning device of JP '376 to clean an intermediate carrier because toner, dust and paper debris can be removed that accumulate over a number of image formations.

18. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP# 62-164376 in view of Kukimoto (JP# 2001209207).

JP '376 taught supra disclose most of what is claimed except the toner having a specific shape factor. Kukimoto teach the use of a toner which has a specific shape factor SF-1, SF-2 as claimed. It would have been obvious to one of ordinary skill

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in the art at the time the invention was made to use this type of shape factor for the toner because the toner will have excellent development performance.

19. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP# 62-164376 in view of Yamashita (EP# 1239334).

JP '376 taught supra disclose most of what is claimed except the toner having a charge control agent with a specific M/T ratio Yamashita teach a toner having a charge control agent with a specific M/T ratio. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use this type of toner because excellent development can be accomplished.

20. Claims 4,15-17,19,22,33,35,37,47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

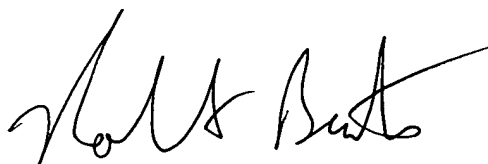
Haneda et al., Matsui et al., Tokunaga et al., Lindblad et al., Tsuji (JP), and Koiso (JP) all teach various cleaning devices with abrading members and toner compositions having specific characteristics.

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22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Beatty whose telephone number is (571) 272-2130. The examiner can normally be reached on M-F from 9 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley, can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Robert Beatty', is positioned above the printed name and title.

Robert Beatty
Primary Examiner
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